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CS4341 A16
Project 5 Writeup

Please note that most of the information required for this writeup is in the README.md file provided. This portion of the write up is mostly for the performance comparison. In this I will compare the number of consistency checks the program had to run under several different situations. The first will be with my whole implementation of backtracking, looking ahead, and heuristics. The other will remove the heuristics. Each of these will be done using several input files ran five times each. The data was taken from the verbose version of my program and the input files were chosen at random.

	Without heuristics	Everything
Checks for input1.txt	1	1
Checks for input4.txt	28	28
Checks for input6.txt	9	9
Checks for input7.txt	5	5
Checks for input10.txt	9	9
Checks for input12.txt	10	10
Checks for input15.txt	8	5
Checks for input17.txt	6	6
Checks for input19.txt	6	6
Checks for input20.txt	6	6
Checks for input25.txt	38	44

As we can see from the data, the heuristics are not perfect. While they did help in the case of input15.txt, they actually hurt input25.txt. This means that I will have to continue refining the heuristics so they more properly judge how constrained an item is or how full a bag is. Perhaps the degree to which the constraints are different is not explicit enough and the heuristic is judging most items to be the same value when they are subtly different.